

REMARKS

By the above amendments, the claims which have been objected to have been amended utilizing the Examiner's helpful suggestions with independent claims 1 and 14 as well as dependent claim 16 in placing parentheses around the terms $(ah1+v1/aS1)$ and $(ah2+v2/aS2)$ as well as pointing out that the height is measured from the solder-underlying region of the first electrode and the second electrode to the one surface of the optical device which earlier in the claims is recited as "one surface" of the optical device on the side opposite to the surface for mounting the third electrode and the fourth electrode. Applicants note that the height value is represented by H in Figs. 3b and 5b, for example. Furthermore, new dependent claims 21 - 23 which depend from claims 1, 14 and 16 have been presented and recite the feature that the values in parentheses provide a height value which is a substantially constant value, as described in the paragraph bridging pages 11 and 12 of the specification.

Applicants note that claims 3 - 10 are indicated as being allowable if rewritten to overcome the objections set forth in the office action and to include all of the limitations of the base claim and any intervening claims. By the present amendment, claim 3 has been written in independent form incorporating the features of parent claim 1 therein, which claim 1 has been amended to overcome the objections noted by the Examiner such that applicants submit that claim 3 and its dependent claims should now be in condition for allowance. Applicants note that claim 9 depends from claim 3 and by the present amendment, claims 11 - 13 have been amended to depend from claim 3 such that claims 9 and 11 - 13 should be considered allowable with parent claim 3. As to the other claims indicated as being allowable and objected to, such claims have been retained in dependent form at this time.

With regard to the objection to the drawing that Figure 7 should be designated by legends such as "PRIOR ART" submitted herewith is a corrected sheet of drawing in which Figure 7 is legended as requested and therefore, applicants submit that the objections to the drawings should now be overcome and acceptance of the drawings are respectfully requested.

As to the rejection of claims 1, 2 and 11 - 13 under 35 USC 102(a) as being anticipated by Ozawa (US 6,474,531); the rejection of claims 14 - 17 under 35 USC 103(a) as being unpatentable over Kitamura et al in view of Ozawa; the rejection of claim 18 under 35 USC 103(a) as being unpatentable over Kitamura et al in view of Ozawa and further in view of Nishi (US 6,700,842) and the rejection of claims 19 and 20 under 35 USC 103(a) as being unpatentable over Kitamura et al in view of Ozawa and further in view of Saitoh et al (US 6,747,939); such rejections are traversed insofar as they are applicable to the present claims and reconsideration and withdrawal of the rejection are respectfully requested.

As to the requirements to support a rejection under 35 USC 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or

possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

With regard to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge". The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown

authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Turning first to the rejection under 35 USC 102 or 35 USC 103, applicants note that in setting forth the rejection, the Examiner utilizes area relationships and volume relationships as specified in independent claims 1 and 14 and the dependent claims thereof which are not disclosed or taught by Ozawa. For example, while Ozawa is directed to a similar problem is mounting an optical device on a substrate, contrary to the position set forth by the Examiner, Ozawa provides no disclosure or teaching of the area and volume relationships as recited in the independent and dependent claims of this application. More particularly, the Examiner refers to Figs. 3 - 4 of Ozawa and elements 4A and 4B with regard to a first electrode and second electrode having at least a solder-underlying region and soldered on the soldered-underlying region. More particularly, the Examiner states:

The solder-underlying region area of the first electrode is aS1, the solder-underlying region area of the second electrode is aS2, the third electrode area is aS3, the fourth electrode area is aS4, the volume of a solder disposed on the solder-underlying region of the first electrode is v1 and the volume of a solder disposed on the solder-underlying region of the second electrode is v2, v1 is not equal to v2 (Figs. 3 - 4), and each of the values of ah1, v1, aS1, ah2, v2 and aS2 is set so that the height of the first electrode and the second electrode in the surface of the solder underlying region to the opposing surface of the optical device is a height in proportion to $\frac{ah1+v1}{aS1}$ or $\frac{ah2+v2}{aS2}$ after the solder has melted... (emphasis added).

As noted above, by the present amendment, it is apparent that the value $(\frac{ah12+v1}{aS1})$ is considered together as well as the value of $(\frac{ah2+v2}{aS2})$. In accordance with the present invention, by controlling the volume and the area in relation to the height values as given, an appropriate height is determined, and

applicants submit that there is no disclosure or teaching of such features in Ozawa, irrespective of the Examiner's contention.

More particularly, while Ozawa discloses that the first solder film 4a and the second 4b are formed on the electrode layers 32 and 33 and a thickness of the first solder film is $3.5\mu\text{m}$ and that of the second solder film 4B is $7\mu\text{m}$ so that a level difference B between the surfaces of the first solder film 4A and the second solder film 4B is $3.5\mu\text{m}$, applicants submit that the thickness, which is only one parameter disclosed by Ozawa, does not necessarily relate to "volume", as claimed.

Furthermore, there is no disclosure concerning the area of the solder-underlying region as represented by the electrodes 32 and 33. While there is no question that such electrode layers have an area and that the solder films 4A and 4B necessarily would have some volume, there is no disclosure or teaching in Ozawa of obtaining a ratio of a volume of particular solder film to the area of the solder-underlying region and combining the same with a height value, as described, of the value of ah_1 or ah_2 , where appropriate, to obtain a height relationship as defined. Applicants note that while in the third embodiment of Ozawa, it is indicated that an outlying C1 of a contact surface of the first solder film 4A is positioned inwardly from an outlying C2 of the contact surface of the p-side electrode 2A, such positioning also does not result in a volume/area relationship which is to be combined with a height to provide a height value as defined. As pointed in the decision of In re Robertson, supra, each and every feature of the claim must be found in a single reference and inherency cannot be shown by possibilities or probabilities. Thus, applicants submit that the Examiner has mischaracterized the disclosure of Ozawa in relation to particular area and volume which combined with a height value provides a height as claimed in the independent claims or a substantially constant height as now recited in newly added

dependent claims 21 - 23. Thus, applicants submit that Ozawa fails to provide a disclosure in the sense of 35 USC 102 of the recited features of independent claims 1 and 14 and the dependent claims thereof, and any suggestion concerning obtaining the relationships as defined represents a hindsight reconstruction of the claimed invention utilizing the principle of "obvious to try" which is not the standard of 35 USC 103 (see In re Fine, supra) or utilizing what applicant has taught against applicant, which is not proper (see In re Lee). Thus, applicants submit that all claims patentably distinguish over Ozawa in the sense of 35 USC 102 and 35 USC 103 and should be considered allowable thereover.

As to the combination of Kitamura et al and/or Nishii and/or Saitoh et al with Ozawa, applicants submit that irrespective of the disclosures of these additional references, these additional references fail to overcome the deficiencies of Ozawa, as pointed out above. Accordingly, applicants submit that any combination of the cited art fails to provide the claimed features, as set forth in the independent and dependent claims of this application, and all claims patentably distinguish over any proposed combination of references in the sense of 35 USC 103 and should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims present in this application patentably distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli,

Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 520.41288X00),
and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



Melvin Kraus
Registration No. 22,466

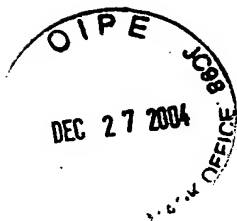
MK/jla
(703) 312-6600

Amendments to the Drawings:

The attached sheet of drawings includes changes to Fig. 7. This sheet, which includes Fig. 7, replaced the original sheet including Fig. 7. In Figure 7, the legend "Prior Art" has been added.

Attachment: Replacement Sheet

Annotated Sheet Showing Changes



7/14

FIG. 7

(PRIOR ART)

